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AN ANNOTATED BIBLIOGRAPHY OF BEHAVIOR MODIFICATION WITH CHILDREN AND RETARDATES.

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PAPERS OR STUDIES CONCERNED WITH THE APPLICATION OF BEHAVIOR MODIFICATION PRINCIPLES TO CHILDREN AND RETARDATES ARE INCLUDED IN THIS ANNOTATED BIBLIOGRAPHY. AUTHORS ARE LISTED ALPHABETICALLY. A SHORT PARAGRAPH DESCRIBES THE GENERAL NATURE OF EACH STUDY CITED, AND BIBLIOGRAPHIC REFERENCES ARE GIVEN. THERE ARE 130 ENTRIES IN THIS BIBLIOGRAPHY. (MS)

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If any references have been left out, we would appreciate receiving them. Please send any information to Dr. Luciano L'Abate, Department of Psychology, Georgia State College, 33 Gilmer Street, S.E., Atlanta, Georgia 30303.

Allen, K. Eileen; Hart, Belly; Buell, Joan S.; Harris, Florence R. & Wolf, M. "Effects of social reinforcement on isolate behavior of a nursery school child." Child Development, 1964, 35, 511-518.

A pre-school girl who exhibited a low rate of social interaction with her peers was helped to achieve sustained play relations through systematic use of behavior principles. Later checks indicated that adequate social play behavior was maintained through the rest of the school year. (Also available in Ullman and Krasner's Case Studies in Behavior Modification, pp. 307-312.)

Azrin, N. & Lindsley, O. R. "reinforcement of cooperation between children." The Journal of Abnormal and Social Psychology, 1956, 52, 100-102.

Operant conditioning techniques can be used to develop, maintain and eliminate cooperation between children without the use of specific instructions concerning cooperation. The rate of cooperative response changes in much the same way as a function of single reinforcements as does an individual response. (Also available in Ullman and Krasner's Case Studies in Behavior Modification, pp. 330-333.)

Baer, D. M. "Laboratory control of thumbsucking by withdrawal and representation of reinforcement." Journal of the Experimental Analysis of Behavior, 1962, 5, 525-528.

A 5-year old boy was shown cartoons and punished for thumbsucking during alternative cartoons by turning off the cartoons for as long as his thumb remained in his mouth. Thumbsucking weakened during such periods. (Also available in Ullman and Krasner's Case Studies in Behavior Modification, pp. 285-289.)

Baer, D. M. & Sherman, J. A. "Reinforcement control of generalized imitation in young children." Journal of Experimental Child Psychology, 1964, 1, 37-49.

Three imitative responses (head nodding, mouthing and strange verbalizations) were established in young children by social reinforcement from a puppet. A fourth imitative response (bar-pressing), which was never reinforced, was found to increase in strength when reinforcement followed the other three imitative responses. Two additional procedures, extinction and time out from the other imitative responding had the following results. During extinction imitative bar-pressing decreased in strength and rose when reinforcement was reinstated.

Baller, W.R. "Conditioned response treatment for enuresis." Exceptional Children, 1956, 22, 233-247.

The purpose of this article is to report some finds from an instrumental method of treatment and to show how certain of the conclusions have special importance for professional workers who deal with exceptional children." Follow up data are for a minimum of 24 months.

Bandura, A. "Behavioral Psychotherapy." Scientific American, 1967, 216 (3), 78-86.

Abnormal behavior can be thought of not as a system of a hidden illness but as a problem of "social learning", and can be treated directly by methods that are derived from principles of learning. Preliminary applications of social learning approaches to psychotherapy indicate that these methods hold considerable promise; they need to be developed further, extended to the treatment of multiple problems and evaluated after a sufficient period has elapsed.

Barrett, Beatrice H. "Acquisition of operant differentiation and discrimination in institutionalized retarded children." American Journal of Orthopsychiatry, 1965, 35, 862-885.

A device for simultaneous measurement of free-operant response differentiation and stimulus discrimination demonstrated specific deficits in the 2 functionally independent processes. A constant apparatus program revealed reliable individual differences in speed, sequence and efficiency of acquisition and in performance stability. Neither age, psychometric scores, verbal facility, nor duration of institutionalization accurately predicted individual performance. Continuum extremes were related to school pregress.

Barrett, Beatrice H., & Lindsley, O. R. "Deficits in in acquisition of operant discrimination and differentiation shown by institutionalized retarded children." American Journal of Mental Deficiency, 1962, 67, 424-436.

Some findings from the first year of continuing laboratory investigation of the operant behavior of a representative group of institutionalized children are described. The research focused on the location and automatic measurement of clinically and educationally relevant behavior deficits in a controlled experimental enviroment. The method of simultaneous and indipendent measurement of response differentiation and stimulus discrimination was sensitive to a variety of reliable individual response patterns, including a wide range of

deficits. Most of the latter were revealed only through repeated, continuously recorded, controlled observations over many experimemtal sessions. Individual variability, both between sessions and within sessions, is extreme enough in some cases to demand prolonged study. The authors feel that the nature and amount of individual variability emerges as an important and basic datum rather than as statistical "noise" or therapeutic failure.

Bentler, P. M. "An Infant's phobia treated with reciprocal inhibition therapy." Journal of Child Psychology and Psychiatry, 1966, 3, 185-189.

A year-old female child acquired phobic reactions to water when slipping in a bathtub. She was treated with reciprocal inhibition psycho-therapy. Attraction toward toys and body-contact with the mother were used to elicit responses which were presumed to be imcompatible with anxiety. One and one half months after the traumatic incident the infant gleefully initiated approach responses toward the formerly phobic object. A follow-up study conducted at age 18 months indicated these changes were permanent. (Also available in Ullman and Krasner's Case Studies in Behavior Modification, pp. 297-300.)

Bergin, A.E. "Some implications of psychotherapy research for therapeutic practice," Journal of Abnormal Psychology, 1966, 71(4), 235-246.

Implications for practice and research are drawn from a survey of psychotherapy research findings, condensed into 6 broad conclusions: (1) psychotherapy causes clients to become better or worse adjusted than controls; (2) control Ss improve with time as the result of informal therapeutic encounters; (3) therapeutic progress varies with therapeutic warmth, empathy, adjustment andexperience; (4) client centered therapy is the only intervieworiented method that has been validated by research; (5) traditional therapies are seriously limited in effectiveness and are relevant for a small minority of disturbances; and (6) behavior therapies have considerable promise for enhancing therapeutic effectiveness and should be utilized or experimented with more widely. (2 p. ref.)

Bernsberg, G.J.: & Colwell, C.N.; & Cassell, R.H. "Teaching the profoundly retarded self-help activites by behavior shaping techniques," American Journal of Mental Deficiency, 1965, 69, 674-679.

Six severely retarded children were placed in a special unit and an attempt was made to improve their self-help behavior by the principles of behavior shaping.

Monthly ratings were made on a modified form of the Vineland Social Maturity Scale. All Ss showed substantial improvement. The greatest gain obtained during the first month of conditioning. Some shortcomings of the study were discussed, but it was concluded that the procedures followed resulted in a valuable change in self-help behavior on the part of all Ss.

Bijou, S. W. "Applications of behavioral principles to normal and deviant young children. Paper read at annual meeting. American Psychological Association. Los Angeles California, (September), 1964.

Describes four different cases of severely disturbed children where behavioral modification was successful.

Bijou, S. W. & Orlando R. "Rapid development of multiple-schedule performances with retarded children." Journal of Experimental Analysis of Behavior, 1961, 4, 7-16.

Descriptions and illustrations of a technique for the rapid development of multiple-schedule performances in institutionalized retarded children. The technique, which is designed to allow S to set the pace, is outlined in detail. All the multiple schedules described consist of 2 components which alternate in some fashion. Sample data are presented on 8 Ss illustrating some phases and some of the final performances. (Also available in Ullman and Krasner's Case Studies in Behavior Modification, pp. 339-347 and Eysenck's Experiments in Behavior Therapy, pp. 498-508.

Bijou, S. W. & Sturgess, P. T. "Positive reinforcers for experimental studies with children consumable and manipulation." Child Development, 1959, 30, 151-170.

This paper is an analysis of the kinds and the ways that positive reinforcers may be used in experimental studies with children." It is limited to the relationship between positive reinforcers and instrumental or operant behavior.

Birnbrauer, J. S. & Sawler, Julia "Token reinforcement for learning." Mental Retardation, 1964, 2, 275-279.

Many retarded children do not study and cooperate under usual classroom conditions. Token reinforcement, a system of immediate and of delayed rewards, is suggested not only to teach new skills but also to establish other events and activities as reinforcers of value. The article describes a method which has been used quite often with young severely retarded children.

Birnbrauer, J. S. Bijou, S. W., Wolf, M. M. & Kidder, J.D. "Programmed instruction in the classroom. In ullman L. P. & Krasner, L. Case Studies in Behavior Modification. New York: Holt, Rinehart and Winston, 1965.

A classroom for retarded in which programmed instruction was used for one academic year was described. They found that the eight pupils in the class could acquire skills with these methods and could contribute considerably to their own education. They also discuss their success using a token reinforcement system.

Birnbrauer, J. S., Wolf, M. M., Kidder, J. D., & Tague, C. E. "Classroom behavior of retarded pupils with token reinforcement. Journal of Experimental Child Psychology, 1965, 2, 219-235.

It was the practice in an experimental programmed instruction classroom to reinforce correct responses with knowledge of results, verbal approval, and tokens. The tokens, check marks, were exchanged at the end of each class for an item from an array of edibles, inexpensive toys, and school supplies. To determine if the token reinforcement was essential to the relatively high levels of accuracy and rates of studying maintained by the retarded pupils, tokens were not dispensed for a period of at least 21 days and were then reinstated. Daily records of items completed, percentage of errors, and disruptive behavior were kept. During the no-token period three general patterns of results were obtained: (1) Five of the 15 pupils showed no measurable change in performance. (2) Six pupils increased either makedly in overall percentage of errors or sufficiently to reduce progress in the programs. (3) Four pupils showed an increase in percentage of errors, a decline (or considerable variability) in amount of studying, and an increase in disruptive behavior. Baseline performance was recovered in these 10 pupils when token reinforcement was reinstated.

Brackbill, Yvonne, & Lintz M. "The delay-retention effect in children: roles of reward and knowledge of results. Journal of Psychology, 1967, 66, 149-155.

Investigated the effects on retention of reward vs nonreward and of informational redundance in knowledge of results. In 8 experimental conditions, 147, 3rd grade boys learned a series of discriminations under reinforcement delay intervals of 0 or 10 sec. and were tested for retention either 1 or 8 days later. Results showed retention to be improved by reward but

not by redundancy. In addition, the delay-retention effect appeared after the short retention interval.

Cautela, Joseph R. "Treatment of compulsive behavior by covert sensitization, " Psychological Record, 1966, 16, 33-41.

In the method of covert sensitization the S is asked to visualize the pleasurable stimulus while at the same time he is given instructions to imagine an unplesant sensation. The method is described in detail, and 2 cases are presented illustrating its use.

Cowan, P. A., Hoddinott, B. A. & Wright, Barbara Anne. "Complicance and resistance in the conditioning of autistic children; an explanatory study. Child Development, 1965, 36, 913-923.

12 autistic children between 4 and 5 chose red and square objects from a stimulus array. Ten Ss avoided emitting correct responses. The results suggest that more attention should be paid to the distinction between responses that autistic children are unable to make and response that they are unwilling to make.

Davidson, G. C., "The training of undergraduates as social reinforcers for autistic children." In Ullman, L. P. & Krasner, L., Case Studies in behavior modification. New York: Holt, Rinehart and Winston, Inc., 1965.

An attempt was made to train four undergraduates in the principles and methods of behavior modification. It was found that intelligent, highlymotivated students can be trained in a very short time to execute a behavior-control program that requires the application of learning principles to the manipulation of psychotic behavior in children.

Dayon, M., "Toilet training retarded children in a state residential institution," Mental Retardation, 1964, 2, 116-117.

A toilet training program initiated spontaneously by a charge attendant of a low level cottage in a state residential institution for the mentally retarded is described. Improvement of toilet behavior was measured by the amount of dirty laundry. In addition to decreasing the laundry out-put, the procedure controlled the amount of soiling on the dayroom floors, which had been a major concern of physicians and directors of cottage life.

DeLeon, G. & Mandell, W. "A comparison of conditioning and psychotherapy in the treatment of functional enuresis" Jounal of Clinical Psychology, 1966, 22, 326-330.

Conditioning, psychotherapy, counseling and control groups of 56, 13, 18 enuretic Ss, respectively, were established and bed-wetting behavior was observed. Cures were obtained in 83.3% of the conditioning Ss, 18.2% of the psychotherapy Ss and 11.1% of the control Ss. Relapse rates were high in the conditioning groups but severity was lower and restraining was relatively rapid.

Dinsmoor, J. A. "Comments of Wetzel's treatment of a case of compulsive stealing," Journal of Consulting Psychology, 1966, 30, 378-380.

Doubros, S.G. "Behavior therapy with high level, institutionalized, retarded adolescent," Exceptional Children, 1966, 33, 229-233.

The thesis of this paper is that instrumental, nonverbal behavior can be modified by a deliberate, repetitive, and systematic conditioning of verbal behavior according to experimentally established principles of learning. Two therapy cases are presented in support of this thesis.

Edwards, M. & Lilly, R. T. "Operant conditioning: an application to behavioral problems in groups," Mental Retardation, 1966, 4, 18-20.

From a closed ward of assaultive, retarded females, a group of the most difficult to manage was selected for training in mealtime behavior by reinforcement and management procedures. Except for three individuals, mealtime behavior on the ward for this group was modified to a very satisfactory degree.

Ellis, N. R. "Toilet training the severly defective patient: and S-R reinforcement analysis," American Journal of Mental Deficiency, 1963, 68, 98-103.

The aim of this paper is to present a theoretical analysis of "toilet behavior" from a viewpoint of molar behavior theory and to deduce implications fora training program.

Ellis, N. R. International Review of Research in Mental Retardation, New York: Academic Press, 1966.

This is the first of a series of volumes, which offer integrated summaries of recent research activities with the retardate. The materials should be of value

to learning psychologist, educators and others. Volume I includes several articles by Spradlin and others on behavior modification with retarded children.

Ellis, N. R. Amount of reward and operant behavior in mental defective. American Journal of Mental Deficiences, 1962, 66, 596-599.

In 2 experiments on mentally defective Ss, Hull's postulate of incentive motivation (K) was tested with negative results. In Experiment I the amount of reward was varied by giving 1 or 3 cigarettes and penny candy as rewards. There was some suggestion that lowered amount of reinforcement facilitated performance. Ss of low IQ tended to leave the test before getting the 20 rewards available to them. During extinction, those with higher IQs tended to stop responding sooner. Operant rate during conditioning was a slightly better predictor of success in standard measures of learning, such as rotary pursuit, serial verbal, than the Binet and Kuhlmann IQs.

Ellis, N. R., Barnett, C. D. & Pryor, Margaret W. "Operant behavior in mental defectives: Exploratory studies. Journal of Experimental Analysis of Behavior, 1960, 3, 63-69.

The behavior of mentally defective human subjects is analyzed by free-operant techniques under fixed-interval, variable-interval, and fixed-ratio schedules of reinforcement. The results show that a wide range of mental defectives with extremely limited skills adapt readily to the operant-conditioning procedures and respond appropriately to the special conditions of reinforcement.

Eysenck, H. J. (ed.) Experiments in Behavior Therapy, New York: Pergamon Press , 1964, pp.558.

This book contains a series of reports on experiments involving the application of modern theories of learning and conditioning to behavior disorders. Includes nine papers on behavior therapy with children.

Eysenck, H. J. & Rachman, S. The Causes and Cures of Neuroses, San Diego: Robert K. Knapp Publisher, 1965, pp. 317.

This book is an introduction to post-Freudian methods of diagnosing and treating neurotics. For convenience of reference these methods are known collectively as "behavior therapy", a term which indicates their derivation from modern behaviorism, learning theory,

and conditioning principles. Includes three chapters on childhood disorders.

Ferster, C. B. "Operant reinforcement analysis of infantile autism, American Journal of Psychotherapy, (in press)

Ferster, C. B. The repertoire of the autistic child in relation to principles of reinforcement. In Gottschalk, L. A. & Auerbach, (eds.) Methods of Research in Psychotherapy. (in press)

Ferster, C. B. "Positive reinforcement and behavioral deficits of autistic children." Child Development, 1961, 321, 437-456.

Applying the basic principles and variables of operant conditioning, an analysis of the particular kinds of behavioral deficits seen in the autistic child is presented. It is suggested that the variables hypothesized as relevant in the development of autism are potentially observable and amenable to empirical test. (Also availiable in Frank's Conditioning Techniques.)

Ferster, C. B. & DeMyer, M. K. "A method for experimental analysis of the behavior of autistic children," American Journal of Orthopsychiatry, 1962, 32, 89-98.

The behavior repertories of 3 autistic children were widened significantly in an experimental room using the techniques of operant reinforcement. It may be possible that the same potential for behavioral change would exist in the social milieu if the proper conditions could be generated. (Also available in Ullman and Krasner's Case Studies in Behavior Modification, pp. 121-129.

Ferster, C. B. & DeMyer, M. K. "The development of performances in autistic children in an automatically controlled enviroment," Journal of Chronic Diseases, 1961, 13, 312-345.

"Performances of two autistic children were recorded in an experimental enviroment consisting of vending machines delivering food and candy, a trained pigeon a phonograph, a color kaleidoscope, and a pinball machine. These devices were operated either by keys mounted on them or by coins." (Also available in Eysenick's Experiments in Behavior Therapy, pp. 509-545.)

Ferster, C. B. & Simons, Jeanne. "Behavior therapy with children." Psychological Record, 1966, 16. 65-71.

Describes the use of natural reinforcers to shape and create new bahavior as contrasted with the usual operant paradigm modeled after food reinforcement

procedures with animals. Procedures carried out by a therapist in the natural context of the on going therapeutic analysis of behavior.

Fitzgibbon, Walter C. "Some implications of contemporary research for teaching the mentally handicapped," Mental Retardation, 1965, 3, 12-14.

The purpose of this article is to present some implications of the literature in maternal deprivation, reinforcement learning, and machine teaching for the education of the mentally handicapped.

Fort, Jane G. "Discrimination based on secondary reinforcement. Child Development. 1965, 36, 481-490.

Kindergarten children were trained to a free operant task for a candy reward under partial primary reinforcement schedules and later chode between a candy-associated light and a new candy associated light. Results indicate that a significant discrimination based on secondary reinforcement can be established in children under a variety of training procedures and percentages of primary reward.

Franks, C. M. (Ed.) "Conditioning techniques in clinical practice and research. New York: Springer, 1964.

Contains severalstudies and references to the application of behavioral modification to children.

Freyman, R. "Follow-up study of enuresis treated with a bell apparatus," Journal of Child Psychology and Psychiatry, 1963, 4, 199-206.

Forty-six children out of 71 responded successfully to initial treatment of 3 to 30 weeks, mean 11. 6 weeks. A ten-month follow-up of 37 of the 46 cases disclosed relapses in 13. It was estimated that 27 of the 71 children remained dry 10 months after the initial of further treatments. No substitution of symtoms was reported by any of the parents.

Fuller, P. R. "Operant conditioning of a vegetative human organism," American Journal of Psychology, 1959, 62, 587-590.

Instrument conditioning was used to develop discrete movements of the right arm in an 18-year-old "idiot." In four experimental sessions an appreciable increase in his motor behavior was made. (Also available in Ullman and Krasner's Case Studies in Behavior Modification, pp. 337-339.)

Gardner, J. E. "Behavior therapy treatment approach to a psychogenic seizure case," Journal of Consulting Psychology, 1967, 31, 209-212.

A behavior therapy threatment approach was developed for a child manifesting psychogenic seizures. Treat-

ments, in the form of 3 weekly counseling sessions with the parents only, involved altering intrafamilial reinforcement contingencies so that the child received parental attention for "appropriate" behavior but not for "inappropriate" behaviors such as seizures.

Geppert, T. V. "Management of nocturnal enuresis by conditioned response," Journal of the American Medical Association, 1953, 152, 381-383.

Treatment of a group of 42 patients with chronic nocturnal enuresis by development of a conditioned response is described. All patients, after examination to rule out organic lesions as a cause, were treated by being awakened immediately after the commencement of nocturnal urination by an automatic electric alarm. The conditioned response management of enuresis appears to offer a positive method of attack on a common and stubborn affliction and its attendant personality difficulties. (Reprinted in Frank's Conditioning Techniques, pp.189-195.)

Giles, D. K. & Wolf, M. M. "Toilet training institutionalized, severe retardates: an application of operant behavior modification techniques." American Journal of Mental Defieciency, 1966, 70, 766-780.

The purpose of the study was to evaluate the use of operant behavior modification techniques in toilet training severely retarded children in their usual institution enviroment. The results of this study offer further evidence that operant behavior modification techniques can be an effective means of establishing self-care behavior in institutionalized severe retardates.

Girardeau, F. L. & Spradlin, J. E. "Token rewards in a cottage program," Mental Retardation, 1964, 2, 345-351.

A program based on positive reinforcement was established to manage and train moderately and severely retarded girls in a residential center. Tokens were established as generalized reinforcers by making them redeemable in food, soft drinks, jewelry, clothing and novelties. These tokens were delivered to the children whenever they were engaged in constructive socially acceptable activities. Socially aceptable behavior appeared to increase in frequency.

Gorton, C. E. & Hollis, J. H. "Redesigning a cottage unit for better programming and research for the severely retarded," Mental Retardation, 1965, 3, 16-21.

This report describes the architectual modifications of a cottage for severely retarded children, training techniques and behavioral changes. In addition, the results of three years of basic research with a group of children on the cottage have been summarized.

Grossberg, J. M. "Behavior therapy: a review," Psychological Bulletin, 1964, 62, 77-88.

The questionable effectiveness of traditional psychodynamic psychotherapies and the development of brief new treatment techniques derived from modern learning theory have stimulated interests in applications of conditioning procedures to behavior disorders. A review of this literature revealed that behavior therapies have been applied to many neurotic and psychotic disorders, and have been most successful with disorders involving specific maladaptive behaviors. Conditioning procedures were highly effective with phobic reactions, anxiety reactions, enuresis, stuttering, and tics, but disappointing with alcoholics and sexual disorders. Cures seemed longlasting, with remarkably little evidence of the symtom substitution predicted by psychodynamic depth theories. Behavior therapy offers promising opportunities for the application of well-established psychological principles to the treatment of maladaptive behavior. (4 pages ref.)

Greer, J. H. "Phobia treated by reciprocal inhibition," Journal of abnormal and social psychology, 1964, 69, 642-645.

A case report of the treatment of a severe mice phobia in a 17-year-old girl using systematic desensitization procedures suggested by Wolpe. The training portion of the procedures required 5 sessions while the therapy sessions proper required 11 sessions. Following treatment the patient reported almost complete remission of symptoms.

Hampe, I. E. "The modification of the dominance-submission relationship in dyadic groups of school children as a function of various combinations of reward and punishment. Dissertation abstracts, 1967, 27, 2869.

The purpose of this study were: (a) to determine the differential effectiveness of four combinations of reward and punishment on the modification of dominant behavior in a two-person game situation, and (b) to determine if such modified behavior would be in evidence one week later. The major results from the 100 third and fourth grade school children were as follows: 1. Over 50 trials there was a significant increase in the number of dominant responses emitted by the submissive Ss but none of the treatment groups were differentially effective in bringing about this increase. There were no lasting effects of conditioning. The preconditioning level of responding was manifest within the first block of post-conditioning trials and responding was stable through out the post conditioning period.

Harris, Florence R.; Johnston, Margaret K.; Kelley, C. Susan & Wolf, M. M. "Effects of positive social reinforcement on regressed crawling of a nursery school child," Journal of Educational Psychology, 1964, 55.

Use of soical reinforcement procedures to help a child substitute already established walking behavior for recently reacquired crawling behavior was studied in a nursery school situation. (Also available in Ullman and Krasner's Case Studies in Behavior Modification, pp. 313-319.)

Hart, Belly M.; Allen, K. Eileen; Buell, Joan S.; Harris, Florence K.; & Wolf, M. M. "Effects of social reinforcement on operant crying," Journal of Experimental Child Psychology, 1964, 1, 145-153.

Two preschool boys who showed a high frequency of operant crying were helped to develop more effective responses to mild frustrations. Teachers systematically applied reinforcement procedures. Within a week operant crying had practically disappeared in each case. (Also available in Ullman and Krasner's Case Studies in Behavior Modification, pp. 320-325.)

Hawkins, R. P. ; Peterson, R. F.; Scheweid, Edda; and Bijou, S. W. "Behavior therapy in the home: amelioration of problem parent-child relations with the parent in a therapeutic role," Journal of Experimental Child Psychology, 1966, 4, 99-107.

Describes the experimental modification of a problem mother-child relationship. The child, a four-year-old boy, was extremely difficult to manage and control. Treatment was carried out in the home with the mother as the therapist. The child's objectionable behaviors were observed to change in frequency and topography as a consequence of the treatment and appeared to generalized from the experimental hour to the remaining hours of the day. Nearly a month later these changes were still in evidence.

Headrick, Mary, W. "Operant conditioning in mental deficiency," American Journal of Mental Deficiency, 1963, 67, 924-929.

This paper gives a brief review of research of operant conditioning with mental retardates. It includes sections on the nature of operant techniques, and their applications to mental retardation. 14 ref.

Hewett, F. M. "Teaching speech to an autistic child through operant conditioning. American Journal of Orthopsychiatry, 1965, 35 927-936.

Successful improvement of one case.

Hewett, F. M. "Teaching reading to an autistic boy through operant conditioning. The Reading Teacher, 1964, 17, 613-618.

Case study described in above reference.

Hingtgen, J. N., Sanders, B. J. & DeMyer, M. K. "Shaping cooperative response in early childhood schizophrenics." In Ullman, L. M. & Krasner. L. Case Studies in Behavior Modification, New York: Holt, Rinehart and Winston, 1965.

Six early childhood schizophrenics, who had been observed to initiate little or no social interaction with their peers, were trained to operate a lever to obtain coins (which were later exchanged) on a fixed-ratio schedule of reinforcement. Using nonverbal operant conditioning techniques a cooperative response was shaped with subsequent pains of subjects. The results indicated that it was possible to shape cooperative responses in early childhood schizophrenics within an average of 23 sessions. In addition, other forms of social interaction were observed to increase in frequency in the experimental room. There was little evidence of any continuation of social interaction when the subjects were returned to the ward.

Holland, Audrey L. "Some applications of behavioral principles to clinical speech problems," Journal of Speech and Hearing Disorders, 1967, 32, 11-17.

Findings of behavioral analysis which are relevant to the work of the speech clinician are discussed, and suggestions for the facilitation of their use are presented. Operant conditioning must be understood if it is to be used by the speech clinician.

Hollis, J. H. "Effects of reinforcement shifts on bent-wire performance of severely retarded children. American Journal of Mental Dificiency, 1965, 69, 531-535.

The individual performances of severely retarded children on bent-wire problems are presented and the performance of 2 groups when subjected to qualitative reinforcement shifts are compared. The reinforcement in the experimental group to social

reinforcement (verbal approval and physical contact), and back to a nutritive reinforcer. In the control group the shift in reinforcement was form nutritive reinforcement to a situation of no reinforcement and back to a nutritive reinforcer. The findings are related to previous studies on solution of bent-wire problems which employed subhuman primates and retarded children as Ss.

Hollis, J. H. "The effects of social and nonsocial stimuli on the behavior of profoundly retarded children: part I." American Journal of Mental Deficiency, 1965, 69, 755-771.

This paper presents a method for observing and recording the effects of social and nonsocial stimuli on the behavior of profoundly retarded children. The results of this investigation (Part I, Experiment I) show that specific forms of physical and social stimuli have definite and differential effects on the behavior of profoundly retarded female children. When other-directed responses (grasping, physical contact, etc. with the enviroment) had a high frequency, the self-directed responses (clasping, stereotyped movements, etc.) occurred at a low frequency.

Hollis, J. H. " The effects of social and nonsocial stimuli on the behavior of profoundly retarded children: partII,: American Journal of Mental Deficiency, 1965, 69, 772-789.

This paper presents Part II (Experiment II) of a two-experiment investigation on the responses of profoundly retarded children to social and non social stimuli. The results of this investigation ~~are~~ (Part II, Experiment II) show that specific forms of physical and social stimuli have definite and differential effects on the behavior of profoundly retarded male children. When other-directed responses (grasping, physical contact, etc. with the enviroment) had a high frequency, the self-directed responses (clasping, stereotyped movements, etc.) occurred at a low frequency. The entire investigation (Part I and II) was discussed with respect to: development and behavior, emotion, play behavior and vocal behavior.

Holmes, Frances B. "An experimental investigation of a method of overcoming children's fears," Child Development 1936, 7, 6-30.

"This study was planned with the aim of trying out experimentally a method of overcoming fear in young children. The method was successful in overcoming the fears of 13 of the 14 children who were afraid of the dark room." This is one of the first studies of phobias using a learning model.

Homme, L. E., Debaca, P. C., Denine, J. V., Steinhorst, R. & Rechert, E. J. "Use of the Premack principle in controlling the behavior of nursery school children." Journal for the Experimental Analysis of Behavior, 1963,6, 544.

Successful application of Premack's principle to management of classroom behavior.

Hundziak, Marcel; Maurer, Ruth A.; Watson, L. S., Jr. "Operant conditioning in toilet training of severely mentally retarded boys," American Journal of Mental Deficiency, 1965, 70, 120-124.

Twenty-nine severely retarded boys with SQ's ranging from 8 to 33 and CA's ranging from 7 to 14 and free of major physical handicaps were selected for a controlled study designed to test the efficiency of operant conditioning for toilet training. Results supported the hypotheses that (1) the operant conditioning techniques is superior to the conventional method in toilet training of severely mentally retarded children and (2) ability to use the commode aquired through operant conditioning transfers to the original living unit.

Jones, Mary Cover. "A laboratory study of fear: the case of Peter." Pedagogical Seminar, 1924, 31, 308-316.

A classical study in the creation and and elimination of a phobia through conditioning techniques. (Also available in Eysenck's Behavior Therapy and the Neuroses, pp. 45-51.)

Kerr, N. Meyerson, L. & Michael, J. "A procedure for shaping vocalizations in a mute child." In Ullman, L.P. & Krasner, L. Case Studies in Behavior modification. New York: Holt, Rinehart & Winston, Inc., 1965.

A case study was presented in which an effort was made to establish the conditions under which a mute, three-year old child--who had other serious physical handicaps and behavioral deficits of unknown origin and scope--could exhibit the precursor to imitative behavior; namely, to make a sound within a short interval after the experimentor had made a sound. The child learned to vocalize freely after two hours of intermittent exposure to the reinforcement contingency. A strong tendency to cease vocalizing in response to the experimenter's vocalizations was altered by a fading in procedure. Additional progress in this case and applicability of the procedures to other cases of muteness were predicted.

Kimbrell, D. L., Luckey, R. E., Barbuto, P. F. P. & Love, J. G. "Operation dry pants: an intensive habit-training program for severely and profoundly retarded. Mental Retardation, 1966, 2, 32-36.

Reveals that severely and profoundly retarded institutionalized girls make significant gains in social maturation during a relatively brief period of exposure to a combination of behavior-shaping techniques currently available. Ss, 5-18 yr. of age with a mean social age of approximately 17 mo., made statisically significant progress over and beyond their comparison groups in skills represented by items on the Vineland Social Maturity Scale and 9 categories of behavior included in a modified version of the scale. In addition, the 20 girls in training required only ½ the amount of laundry used by their peers who received conventional institutional care and treatment.

Lazarus, A. A. "The elimination of children's phobias by deconditioning," Medical Proceedings, (South Africa) 1959, 5, 261-265.

An account of the application of Wolpe's psychotherapeutic methods based on the principle of reciprocal inhibition to a preliminary group of 18 phobic children. The results indicate that these methods are eminently effective after 6 months to 2½ years have shown no evidence of relapse in any form. (Also available in Eysenck's Behavior Therapy and the Neuroses, pp. 114-122, and Eysenck's Experiments in Behavior Therapy. pp. 467-474.)

Lazarus, A. A. & Abramovitz, A. "The Use of 'emotive imagery' in the treatment of children's phobias," Journal of Mental Science, 1962, 108, 191-195.

Wolpe's reciprocal inhibition technique, involving systematic desensitization with emotion arousing situations presented to the child's imagination, was used with 7 successes out of 9 cases, and with mean number of treatments of 3.3. (Also available in Eysnck's Experiments in Behavior Therapy, pp. 458-462, and Ullman and Krasner's Case Studies in Behavior Modification, pp. 300-304.)

Lovaas, O. I. "A program for the establishment of speech in psychotic children." In J. K. Wing. Early childhood autism: clinical, educational and social aspects." London, England: Pergamon Press, 1966. pp. 115-144.

Same general content as next abstract.

Lovaas, O. I. Berberich, J. P. Perloff, B. F., & Schaeffer, B. "Acquisition of imitative speech in schizophrenic children, Science, 1966, 151, 705-707.

Report of work carried out at the Neuropsychiatric Institute, UCLA.

Lovaas, O. I., Freitag, G. Gold, V. J. & Kassorla, I. C. "Experimental Child Psychology, 1965, 2, 67-84.
Journal of Experimental Child Psychology
Analysis of self-destructive behavior and its control.

Lovaas, O. I., Freitag, G., Kinder, M., Rubenstein, B., Schaeffer, B. & Simmon, J. "Developing social behaviors in autistic children using electric shock." Psychological Abstracts, 1966, 40, 309.

Three experimental investigations were carried out on 25-year old identical twins diagnosed as childhood schizophrenics by using painful electric shock in an attempt to modify their behaviors. Their autistic features were pronounced; they manifested no social responsiveness, speech, nor appropriate play with objects. They engaged in considerable self-stimulatory behavior, and in bizarre, repetive bodily movements. They had not responded to traditional treatment efforts. The studies show that it was possible to modify their behaviors by the use of electric shock. They learned to approach adults to avoid shock. Shock was effective in eliminating pathological behaviors, such as self-stimulation and tantrums. Affectionate and other social behaviors toward adults increased after adults had been associated with shock reduction.

Lovibond, S. H. Conditioning and Enuresis, Oxford, England: Pergamon Press Ltd., 1964, pp. 219.

Reviews the literature on enuresis, the major theories of enureisis, and their implications for treatment. Reports of original research with rate to clarify problems related to conditioning treatment of enuresis, an extensive survey regarding family background, severeity of toilet training, etc. to provide evidence relative to the various theories of enuresis, and field experiments is included which deals with the clinical application of conditioning treatment of enuresis.

Martin, B. and Kubly, Delores. "Results of treatment of enuresis by a conditioned response method," Journal of Consulting Psychology, 1955, 19, 71-73.

The results of treating enuresis by a conditioned response method are reported in this study. It was found from questionaire responses by parents of 118 children that this procedure was relatively successful in 74% of the cases. Girls were found to have enuresis less frequently and to be cured more easily when they did have it.

Metz, J. R. Conditioning generalized imitation in autistic children. Journal of Experimental Child Psychology, 1965, 2, 389--399.

Generalized imitative behavior, commonly found in normal children but reduced or absent in autistic children, was studied in two autistic children. Operant conditioning methods were applied to teach the children generalized imitative behavior in a laboratory setting. The children learned to imitate on specifically trained tasks. More important, this learning generalized to similar but new tasks where specific training and specific rewards were not given.

Miron, N. B. "Behavior shaping and group nursing with severely retarded patients. In: California, State Mental Hygiene Department. Reinforcement Theory in Psychological Treatment--A symposium. Fischer, J. & Harris, R. E., eds. 1966, p. 1-14.

A treatment program based on behavior shaping and group nursing is described in terms of ets effect on SMR patients. Staff involvement is considered a critical variable with the psychiatric technician assuming primary importance. Acceptance of the program is dependent upon the support of many people as well as their personal involvement in its organization. The patient ward consisted of 94 severely and profoundly retarded adolescent ambulatory girls. Most of these girls evidenced behavior problems, limited toilet training, and very little speech. Functional nursing in large groups was modified to allow the introduction of group nursing. This involved small groups on at least 2 nursing shifts, stable nursing staff, and a group mother. The pilot study consisted of 8 patients and a single technician working a shift for a 5-day week. Reinforcement consisted of candy, food, verbal responses, and physical contact. Aversive controls were discontinued when the results compared unfavorable with positive reinforcement. Data included obervations of level of functioning as shown by the Cain-Levine Scale of Social Competency, indicated a consistant decrease of fatal accidents, a substantial increase in interpersonal contacts, and improvement of personal care.

Mowrer, O. H. " Enuresis-A method for its study and treatment," American Journal of Orthopsychiatry, 1938.

A classical study of the treatment of enuresis with conditioning techniques. (Also available in O. H. Mowrer's Learning Theory and Personality Dynamics, pp. 390-417) New: Ronald Press, 1953.

O'Leary, K. D. & Becker, W. C. "Behavior modification of an adjustment class: a token reinforcement program." Exceptional Children, 1967, 33, 637-642.

A base rate of deviant behavior was obtained for the 8 most disruptive children in the 3rd grade adjustment class. In a token reinforcement program, the children received teacher's ratings which were exchangeable for reinforcers such as candy and trinkets. With the introduction of the token reinforcement program, an abrupt reduction in deviant behavior occurred. Delay of reinforcement was gradually increased to 4 days without increase in deviant behavior. The program was equally successful for all children observed, and anecdotal evidence suggests that the children's appropriate behavior generalized to other school situations.

Orlando, R. "Shaping multiple schedule performances in retardates: establishment of baselines by systematic and special procedures. Journal of Experimental Child Psychology, 1965, 2, 135-153.

Analysis of cases in which a systematic procedure for establishment of multiple schedule baseline performances failed to shape the desired terminal behavior suggested that some parts of the procedure were inadequate. Modifications were made to correct for specific defects noted in demonstration, rate evaluation, rate strengthening, and establishment of stimulus control phases. Data were shown for 2 typical Ss who successfully completed the modified procedure and exibited satisfactory baseline performance of mult VR 25 ext. Differences among successful Ss are limited primarily to necessity for repeating some conditions due to initial failure to meet criteria. The modified systematic procedure was not successful with all institutionalized retardates. Failures appeared to be due to inadequacy of candy as a reinforcer. Sixteen Ss selected to represent a range of chronological age and duration of institutionalization were first given the systematic shaping procedure. Those not exhibiting satisfactory baseline performances then were given a demonstration procedure that was designed to take advantage of the apparently strong influence of social contact with E on the behavior

of these Ss. Five Ss required special procedures, such as schedule changes to increase rate, or negative reinforcers for establishment of S control, or both. Satisfactory baseline performances were obtained in criterion sessions for all 16 Ss. The results suggest that complex performances may effectively be established with systematic shaping procedures, but reinforcer effectiveness differences in some mentally retarded Ss require use of special procedures or conditions.

Orlando, R. & Bijou, S. W. "Single and multiple schedules of reinforcement in developmentally retarded children. Journal of Experimental Analysis of Behavior, 1960, 3, 339-348.

The behavior of developmentally retarded children as a function of four basic schedules of reinforcement and several multiple-schedule variations is illustrated. Effects are similar to those found with nonretarded and infrahuman subjects.

Patterson, G. R. "A learning theroy approach to the treatment of the school phobic child. In Ullman, L. P. and Krasner's Case Studies in Behavior Modification. New York: Holt, Rinehart & Winston, Inc., 1965. A procedure was described for applying the principles of interference and reinforcement to the treatment of a school phobic child. A series of twenty-three 20 minute conditioning sessions with the child followed by highly structured ten-minute interviews with the parents resulted in dramatic changes in behavior.

Patterson, G. R. "An application of conditioning techniques to the control of a hyeractive child." In ullman, L. P. & Krasner's Case Studies in Behavior modification. New York: 1965.

A 9-year old boy who was described as hyperactive in school was conditioned to eliminate this behavior through the use of candy-despensing apparatus in the classroom which rewarded quiet behavior. The days total reward was divided among all the children in the class, therby also previding social reinforcement from peers. The results showed a significant decrease in hyperactive responses per minute and show that it is possible to manipulate "high rate" behaviors occurring in the classroom setting. Problems involved in this and other operant conditioning procedures are discussed.

Patterson, G. R. & Hinsey, W. C., "Investigation of some assumptions and charateristics of a procedure for instrumental conditioning in children. Journal of Experimental Child Psychology, 1964, 1, 111-112.

This report outlines a series of studies investigating two general problems relating to instrumental conditioning procedures for children. The first series of studies analyze the assumptions made with regard to the reliability of measures of response strenth, the effect of sampling various aspects of conditioning data in deriving measures of response strength, and the persistence of conditioning effects over time. The second set of data analyze the effect of reinforceing stimuli in changing serially dependent responses. The dats show that in this procedure children adapt nonrandom patterns of responding. The particular pattern adopted by the child is a significant determinant of the magnitude of behavior change produced by reinforcing stimuli.

Peterson, D. R. & London, P. "Neobehavioristic psychotherapy: quasihypnotic suggestion and multiple reinforcement in the treatment of a case of post-infantile dyscopresis," Psychological Record, 1964, 14, 469-474.

In both theory and practices, most forms of behavior therapy exclude insight as a treatment goal and even as a means to the attainment of other treatment goals. In modern behavior theory, however, the phenomena of cognition and insight are admissable and important topics for scientific inquiry. Recent studies show that learning can be dramatically facilitated by awareness.. Ignoring the human capacity for insight in a psychotherapeutic system may be foolishly inefficient. These principles are clarified in an illustrative case. (Also available in Ullman and Krasner's Case Studies in Behavior Modification, pp. 289-295.)

Parsley, N. B. and Hamilton, J. W. "The Development of a Comprehensive Cottage-Life Program," Mental Retardation, 1965, 3, 25-29.

In August of 1964 and experimental cottage project was started at Gracewood (Georgia) State School and Hospital, the state residential facility for the retarded. This paper is a report of its development and progress at the end of four months. The purpose of the project is to determine and demonstrate effective methods of improving resident care on the cottage level.

Pihl, R. O. "Conditioning procedures with hyperactive children." Neurology, 1967, 17, 421-423.

The hyperactive, or hyperkinetic, syndrome has been discussed recently by a number of investigators.

Studies with lower organism have shown that, by making the presentation of food contingent on an animal's remaining motionless and shock contingent on the animal's movements, the extent of that anumals' activity can be controlled. The 2 cases presented... are examples of these procedures with hyperactive children... Conditioning techniques used in controlling hyoeractivity provide a valuable methodology that does not rely on drugs or surgical procedures. Then when control over activity per se has been achieved., other problems can be met with more traditional methods. Further, this technique can be utilized to achieve a base line of activity upon which drug and surgical procedures can be evaluated. General statements from the 2 reported cases must be tempered because of the unknown effects of numerous variables, such as extent and localization of neurological damage, age variables, and possible differences in etiology."

Premack, D. "Reinforcement theory." In D. Levine (Ed.) Nebraska Symposium on motivation: 1965, 123-180.

General theoretical article.

Rabb, Ehtel & Hewett, F. M. "Developing appropriate classroom behaviors in a severely disturbed group of institutionalized kindergarten-primary children utilizing a behavior modification," American Journal of Orthopsychiatry, 1967, 37, 313-314.

Describes a program to engage hospitalized children dianosed as autistic, a typical, severe primary behavior disorders in a group learning situation.

Rachman, S. "Systematic desenitization," Psychological Bulletin, 1967, 67, 93-103.

Describes the nature and background of the most prominent tecnique of behavior therapy, systematic desensitization. The relevant experimental investigations are discussed and assessed, and general conclusions regarding the present status of the method are drawn. It is suggested that future investigations might concentrate on (1) the efficacy of densensitization in treating disorders other than specific fears, and (2) replicating the established findings with psychiatric patients.

Rheingold, H. L.; Gewirtz, J. L. & Rose, H. W. "Social conditioning of vocalization in the infant," Journal of Comparative and Physiological Psychology, 1959, 52, 68-73.

Infants often vocalize as part of the response they give to the appearance of an adult. The central question of this study is: Can the frequency of vocalizing be increased if the adult makes a social response contingent upon it. The results suggest that the social vocalizing of the infants and, more generally, their social responsiveness may be modified by the responses adults makes to them.

Rheingold, H. L., Stanley, W. C. & Doyle, G. A., "Visual and auditory reinforcement of a manipulatory response in the young child." Journal of Experimental Child Psychology, 1964, 1, 316-326.

Children, aged 2-5 years, were given an opportunity to touch a ball and to discover that a touch could result in a short sequence of motion pictures accompanied by music. The reinforcing effects of the viual and auditory stimuli were assessed primarily by the extent to which fixed ratio (FR) schedules of reinforcement controlled rate of response. In one group of 20 Ss assigned to FRs, 15 Ss showed increasing rates of response with advancing ratios. In a second group of 5 Ss maintained a continuous reinforcement (CRF), none showed a progressive increase in rate of response during the session. The data indicate that the stimuli functioned as reinforcers. The findings suggest that manipulatory behaviors, through which the child learns some of the dimensions of his enviroment, can be maintained by the stimulation resulting from the manipulations..

Rice, H. K. & McDaniel, Martha W. "Operant behavior in vegetative patients," Psychological Record, 1966, 16, 279-281.

Reports operant conditioning studies with profoundly retarded (vegetative) children, and emphasizes the unique problems in studying this population and the methods used to study operant learning in these patients.

Risley, T. R. "The extablishment of verbal behavior in deviant children." Dissertation Abstracts, 1966, 27, 989-990.

On the assumption that the development or lack of development of normal speech is related to conditions in the home enviroment, one aspect of the home enviroment, was modified, namely the skill and probability of the parent's reinforcing approximations to appropriate verbal behavior. The children's parents were trained to employ reinforcement contingencies in formal sessions in the home, and became able to maintain

and expand their child's verbal repertoire. During the course of this study experimental manipulations were made to isolate the effects of the reinforcement variables involved in the procedures. This program was effective in systematically establishing limited repertoires of normal verbal behavior in all Ss. The results of this study indicate that normal verbal behavior can be produced from rudimentary imitative verbal behavior through the application of established principles of behavior and by implication, that these principles are involved in the normal development of verbal behavior.

Roos, P. "Development of an intensive habit-training unit at Austin State School," Mental Retardation, 1965, 3, 12-15.

A specialized training unit for development of self-help skills in severely retarded children is described. Details of the training procedures are outlined.

Rosenhan, D. "Aloneness and togetherness as drive conditions in children. Journal of Experimental Res. in Personality, 1967, 2, 32-40.

In order to examine the effects of aloneness (social deprivation) and togetherness (social satiation) on the subsequent responsiveness of children to reinforcers, younger and older Ss were socially deprived or satiated and then exposed to either positive or negative, social or nonsocial reinforcement. The findings indicate that socially deprived children are indifferent to the valence of the subsequent reinforcement, so long as it is social. Socially satiated children are subsequently most responsive to non social reinforcement (or pure information). Additional findings indicate that younger children respond more to negative reinforcement, while older children show a strong preference for positive reinforcement. The results are examined for their implications for theories of social drives, and for the limitations they set on the development of problem-solving behavior.

Ross, A. O. "Learning theory and therapy with children," Psychotherapy: theory, research and practice, 1964, 1, 102-107.

Compares therapeutic approaches to learning theory and therapy of both behavior therapists and psychotherapists. Suggests that use of principles of learning be used in conjunction with behavior therapy.

Schwitzgebel, R. & Kulb, D. A. " Inducing behavior change in adolescent delinquents. Behavior Research and Therapy, 1964, 1, 297-304.

Using monetary rewards.

Sidman, M. & Stoddard, L. T. "The effectiveness of fading in programming a simultaneous form discrimination for retarded children. Journal of the Experimental Analysis of Behavior, 1967, 10, 3-15.

A nonverbal teaching program, combined with reinforcement and extinction (Program Group), was compared with reinforcement and extinction alone (Test Group), in teaching retarded children to discriminate circles from ellipses. In the Program Group, fading techniques were used to transfer stimulus control from "bright vs dark" to "form vs. no-form" and then to"circle vs ellipse". The Test Group had the task of learning the circle-ellipse discrimination with no prior teaching program. With the program, 7 of 10' Ss learned the circle-ellipse discrimination. Without the program, 1 Of 9 learned. The 8 Test-Group Ss who failed to learn circle vs. ellipse were then given the opportunity to learn the form-no-form discrimination by reinforcement and extinction alone, without fading. 6 of the 8 learned, but only 3 of these 6 then learned circle vs. ellipse on a 2nd test. All 7 program-Group Ss who had learned form vs. no-form also learned the circle-ellipse discrimination by means of fading; each of the 7 made fewer errors than any of the 3 who succeeded on a 2nd test. Ss who failed to learn circle vs. ellipse adopted response patterns incompatible with the development of appropriate stimulus control.

Spradlin, J. E. "Effects of reinforcement schedules on extinction in severely mentally retarded children," American Journal of Mental Deficiency, 1962, 66, 634-640.

"The effects of reinforcement schedules on the extinction and spontaneous recovery of an operant response in severely mentally retarded children (is) examined."

Spradlin, J. E., Girardeau, F. L. & Corte, En. "Fixed ratio and fixed interval behavior of severly and profoundly retarded subjects. Journal of Experimental Child Psychology, 1965, 2, 340-353.

Profoundly and severely retarded Ss were studied with operant conditioning procedures. Through shaping techniques, an operant knob-pulling response was

established by 15 profoundly and severely retarded Ss. Ss showed rather typical fixed ratio behavior with high rates of responding and with pauses after reinforcement. Mild deprivation increased the number of responses per session for 2 Ss. For a 3rd S a change in reinforcer increased the number of responses. Fixed interval schedules yielded low rates of responding with some evidence of temporal discrimination.

Staats, A. W. "Treatment of non-reading in a culturally deprived juvenile delinquent: an application of reinforcement principles. Child Development, 1965, 36, 926-942.

A 14-year old, Mexican-American delinquent was given 40 hours of reading with token reinforcement. His reading achievement improved and his delinquent behavior decreased to zero.

Staats, A. W., Finley, J. R., Minke, K. A., & Wolf, M. Reinforcement variables in the control of unit reading responses. Journal of Experimental Analysis of Behavior, 1964, 7, 139-149.

Staats, A. W., Minke, K. A., Finley, J. R., Wolf, M. & Brooks, L. O. "A reinforcer system and experimental procedure for the laboratory study of reading acquisition," Child Development, 1964, 35, 209-231.

Three 4-year old children were introduced to a laboratory procedure for the controlled presentation of a reading acquisition task. Reading responses were automatically recorded on standard operant conditioning equipment. A reinforcement system was employed using tokens backed up by a variety of subject-selected reinforcers. Results indicated that (a) the reinforcer system appeared to solve the major problem involved in maintaining children's behavior over long periods so that complex behavior may be studied, (b) the reading materials and their presentation yielded sufficient experimental control to allow for the further study of independent variables important to reading acquisition, and (c) the responses constituted a sensitive measure of the behavior under study.

Watson, J. B. See page 31

Watson, L. S. "Application of behavior-shaping devices to training severely and profoundly mentally retarded children in an institutional setting. Paper read at the annual meeting of the Midwestern Psychological Association, May, 1966.

The advantages of behavior-shaping devices over an

attendant "behavioral engineer" for training severely and profoundly MR children (IQs of 35 or less) are effectiveness, efficiency, and economy. Behavior-shaping devices are particularly useful for detecting and promptly reinforcing a desired response. Detailed description of such devices included an automated toilet trainer and an automated perceptualmotor development apparatus, designed to develop eye-hand coordination, finger-hand dexterity, and gross locomotor coordination. Development of a technology of automation to "teach" social and self-help skills to severely and profoundly MR children is proposed.

Watson, L. S. 7 Lawson, R. "Instrumental learning in mental retardates. Mental Retardation Abstracts, 1966, 3, 1-20.

Laboratory instrumental learning research with MRs was reviewed. Studies of discrimination, reinforcement, stimulus generalization, transfer of training and transposition were considered. Discrimination studies reported were concerned with operant conditioning and simple discrimination and learning sets with the Wisconsin General Test Apparatus. In general a relationship was found between MA and discrimination performance, particularly for complex discrimination tasks. Few studies have been concerned with primary and secondary reinforcement. Secondary reinforcement appears to be an effective reinforcement. Performance by retardates in stimulus generalization, trainsfer of training, and transposition studies was similar to that of normals. The most consistent finding was that most basic learning processes function essentially the same in MRs as in normals. The research on laboratory-controlled learning and performance was weakened by the scarcity of long range research programs in which standardized procedures are developed as basic analytic techniques. The areas of study in which the most disagreement existed were areas in which the greatest diversity of research methods are still characteristic.

Watson, L. S., Lawson, R., Sanders, C.C. "Generalized or token reinforcement with severely and profoundly retarded children. Paper read at the 89th annual meeting of the American Association on Mental Deficiencc, Miami, Fla., July 1965.

A generalized reinforcement technique was investigated with 16 severely and profoundly mentally retarded children. They had a mean CA of 10-10 years and a mean IQ of 24.35. Ss were devided equally into experimental

and control groups and were given 4 sessions of pre--training evaluation in a free operant situation. Following this pretest the experimental group received 20 sessions of token reinforcement training. This consisted of each experimental S being given 30 poker chips (tokens) each session and being trained to insert these chips into 2 vending machines, one dispensing different kinds of candy ("edible" dispenser) and the other dispensing or displaying a movie, moving toys, or music "manipulatable dispenser.) The group, included to control for "Hawthorne effect," was given a comparable amount of attention and candy, but received no token reinforcement training. At the end of training, both groups were given 4 sessions of free operant evaluation. A comparison of pre-and posttraining lever pulling rates for poker chip reinforcement indicated that the chips had acquired conditioned reinforcement properties as a result of training.

Watson, L. S., Lawson, R., & Sanders, C. C. "Primary reinforcement preferences of severely and profoundly retarded children in a generalized reinforcement context. Paper read at the annual meeting of the American Psychological Association, Chicago, Ill, 1965.

Primary reinforcement preferences of 14, male institutionalized severely and profoundly retarded children were investigated. They had a mean CA of 11-0 years, and a mean SQ of 23.1 Ss pulled a plunger on different schedules of reinforcement for poker chips and used them to operate candy dispensing and amusement-type vending machines. One machine contained 5 kinds of candy,(edible dispenser), and the other contained a movie projector and a screen, a tape recorder which played music, and 5 cubicles in which electrically operated mechanical toys were placed (manipulatable dispenser). A chip dropped into one of the edible dispenser slots produced candy, the kind varying with the slot selected. A chip dropped into a manipulatable dispenser slot resulted in a toy operating for 10 seconds. The same thing happened with the movie or music. An Analysis of the frequency of chips spent by 14 Ss over 13 sessions showed that initially more chips were spent for manipulatable reinforcement than for candy. But by session 5 a reversal occurred and a slight candy preference gradually emerged. This difference in preference (edible over manipulatable) was not significant although a significant interaction was obtained (.001 level). An analysis of mean proportion of chips spent by 7 Ss over 70 sessions showed a rather stable candy preference

soon emerged and was maintained for the last 45 sessions of the experiment. This difference (F-5.23) approached the .05 level of significance (5.99). An analysis of candy preference showed that malted milk balls and M&Ms were most preferred (.01 and .05 levels respectively) and an analysis of manipulatable preference showed that music was most preferred (.05 level) although this difference may have been the result of a positional effect.

Watson, L. S., & Sanders, C. C. "Stimulus control with severely and profoundly retarded children under varying stimulus conditions in a free operant situation. Paper read at the 90th annual meeting of the American Association of Mental Deficiency, Chicago, Ill., May, 1966.

The influence of Stimulus change in a free-operant situation on the discrimination performance of 10 institutionalized severely and profoundly retarded children was investigated. Ss had a mean CA of 10-1 years with a range from 8-4 years to 14-9 years and a mean social quotient of 22.6 with a range from 16 to 36. They were trained to respond to multiple component stimuli on a multiple VI-extinction schedule of reinforcement. The discriminative stimulus was a cup of candy or a black disc and 6 illuminated clear lamps while nonreinforced stimulus was 2 illuminated blue lamps and a tone. After differential responding developed stimulus components were changed or "faded" until only the black disc was left as a stimulus. Changes in the controlling stimuli resulted in a deterioration of stimulus control or an increase in nonreinforced stimulus responding followed by a gradual recovery of stimulus control. In addition, the maximum stimulus disruption effect was frequently delayed not occurring sometimes until several sessions after the stimulus change was introduced. The findings of this study have application to the problem of transfer of training decrement in severely and profound ly MRs.

Watson, J. B. & Rayner, Rosalie. "Conditioned emotional reactions," Journal of Experimental Psychology, 1920, 3, 1-14.

The classical study of "Peter" in which a phobia against rabbits was created then eliminated using conditioning techniques. (Also available in Eysenck's Behavior Therapy and the Neuroses, pp. 28-37.

Watson, L. S., Jr. "Application of operant conditioning techniques to institutionalized severely and profoundly retarded children," Mental Retardation Abstracts, 1967, 4, 1-18.

The purpose of this paper is to discuss current application of operant conditioning to the control of behavior of institutionalized severely and profoundly retarded children, to speculate about future application of operant conditioning techniques to this population and to suggest a course of action which presumably will facilitate the development of a more effective technology of behavioral engineering for the severely and profoundly retarded.

Watson, Luke, S., Jr. & Lawson, Reed. "Instrumental learning in mental retardates," Mental Retardation Abstracts, 1966, 3, 1-20.

Instrumental learning research is providing the basis for a new, effective technology of educating and training mental retardates with both academic and social implications. Perhaps the most consistent findings with respect to retardation are that most basic learning processes function essentially the same in MRs as in normals. What is clear is that researchers have only begun to discover truly effective, long-lasting reinforcers. (Includes 5 page bibliography.)

Weiner, I. B. "Behavior therapy in obsessive-compulsive neurosis: treatment of an adolescent boy," Psychotherapy: Theory, Research and Practice, 1967, 4, 27-29.

A 15-year-old boy with pervasive compulsive rituals was benefitted by the replacement of these with delimited ones that would interfere only minimally with normal activity.

Weir, M. W. "Children's behavior in a two-choice task as a function of patterned reinforcement following a forced-choice trials," Journal of Experimental Child Psychology, 1965, 2, 85-91.

After 40 forced-choice trials to acquaint Ss with the reinforcement schedules, 120 children between the ages of 3.7 and 5.4 were presented with a two-choice patiial reinforcement situation to test the hypothesis that they would prefer predictable to unpredictable schedules. Choices of one of the alternatives were reinforced on either a 50% alternating or a 50% random schedule, while choices of the other alternative were reinforced on eith a 50, 60, 70% random reinforcement schedule. A significant preference for the predictable schedule was found, but only in groups for which both alternatives paid off with an equal percentage

of reinforcement. The effects of a predictable schedule were apparently weak enough to be overcome by a discrepancy in percentage of reinforcement of 10%. The relevance of this finding for theories of conitive development stressing the importance of predictability, or congruity, are discussed.

Werry, J. S. "The conditioning treatment of enuresis," American Journal of Psychiatry, 1966, 123, 226-229.

Twenty studies of the conditioning treatment of enuresis are discussed and evaluated. The method seems to be "Significantly superior to no treatment at all." Whether or not it follows the operant or classical conditioning paradigm is irrelevant. What is important in recommending it as a method of treatment is its safety, effectiveness and practicability.

Wetzel, R. "Use of behavioral techniques in a case of compulsive stealing," Journal of Consulting Psychology, 1966, 30, 367-374.

Demonstrates the use of behavioral principles in the modification of a deviant behavior. The "compulsive stealing of a 10-year-old resident of a home for mildly disturbed children was successfully eliminated over a 3½ month period." The use of non-professional individuals in the observation, recording, and modification of behavior is demonstrated. Implications are discussed for the role of the professional consultant as instructor in the application of behavior principles.

Whelan, R. J. & Haring, N. G. "Modifications and maintenance of behavior through systematic application of consequences," Exceptional Children, 1966, 32, 281-289.

Discusses behavior principles and techniques of behavior modification which may have implications for use in classes of exceptional children. Dangers inherent in random haphazard application of these principles are cited.

White, J. G. "The use of learning theory in the psychological treatment of children," Journal of Clinical Psychology, 1959, 15, 227-229.

In spite of the fact that for more than thirty years psychologists have been interested in applying principles of behavior discovered in general psychology, especially those of learning, to the understanding of behavior disorders and neuroses in children, these principles have been largely neglected in treatment. In order to demonstrate that this failure of transfer

need not necessarily be perpetuated, the history and treatment were described of a five and one-half year old girl who for three months had resisted all attempts by her relatives, by the family doctor, and by hospital nurses to get her to take solid foods. (Also available in Frank's Conditioning Techniques, pp. 196-201, and in Eysenck's Experiments in Behavior Therapy, pp. 463-466.)

Whitnery, Linda Rae & Bernard, Kathryn E. "Implications of operant learning theory for nursing care of the retarded child," Mental Retardation, 1966, 4, 26-29.

The objective of this paper is to present a nursing approach to the teaching of indipendent living skill, built on the principles of operant theory. The case study presented in this paper represents the work of Whitney in which when applied the principles of operant learning to habilitate and recondition the feeding behavior a retarded child.

Williams, C. D. "The elimination of tantrum behavior by extinction procedures," Journal of Abnormal and Social Psychology, 1959, 59, 269.

"This paper reports the successful treatment of tyrant-like tantrum behavior in a male child by the removal of reinforcement. The treatment in this case did not involve aversive punishment. All that was done was to remove the reinforcement. Extinction of the tyrant-like tantrum behavior than occurred. No unfortunate side or after effects of this treatment were observed." (Also available in Ullman and Krasner's Case Studies in Behavior Modification, pp. 295-296.)

Wolf, M., Risley, T. & Mees, J. "Application of operant conditioning procedures to the behavior problems of an autistic child," Behavior Research and Therapy 1964, 1, 305-312.

An account is given of the treatment of a pre-school child who had serious behavioral and physical handicaps. In a sense this is a study involving both psycho-therapy and rehabilitation. The treatment consisted of applying laboratory-developed techniques through the attendants and the parents over a 7-month period. (Also available in Ullman and Krasner's Case Studies in Behavior Modification, pp. 138-145.

Zimmerman, Elaine H. & Zimmerman J. "The alternative of behavior in a special classroom situation," Journal of the Experimental Analysis of Behavior, 1962, 5, 59-60.

"Unproductive classroom behavior was eliminated in two emotionally disturbed boys by removing social consequences of the behavior. Behavior which was more adequate and efficient with respect to social and scholastic adjustment was shaped and amintained with social reinforcers." (Also available in Ullman and Krasner's Case Studies in Behavior Modification, pp. 328-330.)

ADDENDUM

Bijou, S. W., and Baer, D. M. Child development: readings in experimental analysis. New York: Appleton-Century-Crofts, 1967.

Collection of the 25 outstanding contributions of reinforcement to children. I. Basic principles and concepts: A. Basic mechanisms: operant and respondent; B. extensions to social dimensions; C. Discrimination diagnosis in development; D. Hereditary mechanisms, psychological behavior, and development; E. retrospect and prospect; II. Applications: A. To Social Behavior; B. To Deviant Behavior; C. To Education. III. Review and Overview

Costello, C. G. (U. Calgary, Alberta Canada) "Behavior modification procedures with children." Canadian Psychologist, 1967, 8(2), 73-75.

Discuss various aspects of learning theory in children. A case study of a 14 year old boy with hospital phobia is outlined and several other studies cited. It is concluded that much research and discussion are needed in order to develop rules of behavior modification in children.

O'Leary, K. Daniel; O'Leary, Susan, & Becker, Wesley C. (U. Illinois) "Modification of a deviant sibling interaction pattern in the home." Behaviour Research and Therapy, 1967, 5(2), 113-120.

The experimental modification of a sibling interaction is described. A 6 year old boy and his 3 year old brother frequently engaged in assaultive and destructive behavior. Treatment was carried out in the home using the E and later the mother as the therapist. The children's undesirable behavior changed markedly as a result of a token reinforcement system and a time-out from reinforcement procedure. According to parental and teacher reports, the behavior reinforced during the experimental hour did generalize to other times and situations.

Richard, Henry C., and Dinoff, Michael. (U. Alabama) "Behavior change in a therapeutic summer camp: A follow-up study." Journal of Genetic Psychology, 1967, 110(2), 181-183.

Eleven boys, exhibiting academic and interpersonal problems, attended an 8-week camping program for emotionally troubled children. Attempts to control and shape behavior took these major forms: (1) stage setting for the emergence of adaptive behavior, (2) social reinforcement of adaptive patterns, and (3) various forms of psychotherapy. Counseling sessions were held with parents and reports were sent to referring agencies. A follow-up questionnaire was sent to the parents three months after camp closed. It is concluded that the parents reacted positively to the program and that they perceived their sons as having made gains associated with the camp experience.

Risley, Todd, and Wolf, Montrose. (U. Kansas) "Establishing functional speech in echolalic children." Behaviour Research & Therapy, 1967, 5(2), 73-88.

Summarizes research in the development of speech in echolalic children. The procedures are based on operant behavior-modification techniques such as: (1) shaping and imitation training for the development of speech; (2) fading in of new stimuli and fading out of verbal prompts to transfer the speech from imitative control to control by appropriate stimulus conditions; and (3) extinction and time-out from reinforcement for the reduction of inappropriate behavior in conjunction with the differential reinforcement of appropriate responses which are incompatible with the inappropriate behavior.

Walters, Richard H. (U. Waterloo, Ontario, Canada) Discussion of "Growth of behaviour therapies with children" by Leonard Krasner. Canadian Psychologist, 1967, 8(2), 76-80.

A discussion of Krasner's paper presented at the 1966 Conference on Behavior Modification. Various methods of behavior therapy are outlined and a case study discussed. It is concluded that in dealing with children especially no 2 are completely alike and so behavior therapy should be modified to fit the individual needs of each particular patient.

Wolf, Montrose, et al. (U. Kansas) "Application of operant conditioning procedures to the behavior problems of an autistic child: A follow-up and extension." Behavior Research & Therapy, 1967, 5(2), 103-111.

The modification of an autistic boy's behavior in a nursery school setting is described. The procedures used to deal with his problem behavior such as tantrums, pinching, and toilet training are discussed.